

AB 2. (amended) A method for improving a detection sensitivity of a target component, which comprises providing the diffusion promoting device just before a separation column in a low flow velocity gradient high performance liquid chromatographic apparatus, wherein said diffusion promoting device comprises a solvent inlet tube and a solvent outlet tube and wherein said device includes at least one feature selected from the group consisting of (i) having a solvent inlet tube and a solvent outlet tube with different inner diameters, (ii) having a solvent outlet tube connected to a solvent inlet tube at an acute angle, a right angle, or an obtuse angle, and (iii) having a solvent outlet tube connected to a solvent inlet tube by a connecting part having a diameter that is larger than the diameters of the diameters of the solvent inlet and outlet tubes.

---

AB 5. (amended) The diffusion promoting device according to Claim 1, wherein a frit is inserted into at least one of the solvent inlet tube, the solvent outlet tube, and a position between the solvent inlet tube and the solvent outlet tube.

---

6. (unamended) The diffusion promoting device according to Claim 5, wherein the frit is a sintered filter, a ceramic, a metal mesh, or a cellulose fiber.

7. (unamended) The diffusion promoting device according to Claim 1, wherein the low flow velocity gradient high performance liquid chromatographic apparatus is a gradient micro high performance liquid chromatographic apparatus, a gradient semimicro high performance liquid chromatographic apparatus, or a gradient capillary high performance liquid chromatographic apparatus.

8. (amended) A low flow velocity high performance liquid chromatographic apparatus comprising the diffusion promoting device according to Claim 1 at just before the separation column.


9. (amended) A low flow velocity high performance liquid chromatographic apparatus in which the diffusion promoting device according to Claim 1 is connected between the component concentration column and the separation column.

10. (twice amended) A low flow velocity high performance liquid chromatographic apparatus in which a solvent pump (P1), an injector (I), a switching valve (V) are connected in this order in one line; and a solvent pump (P2), a switching valve (V), the diffusion promoting device (DU) according to Claim 1, a separation column (C) and a detector (D) are connected in another line.

11. (twice amended) A low flow velocity high performance liquid chromatographic apparatus in which a solvent pump (P1), a switching valve (V), a solvent mixer (MC) and a switching valve (V) are connected in this order in one line; a solvent pump (P2), a switching valve (V), the diffusion promoting device (DU) according to Claim 1, a separation column (C) and a detector (D) are connected in another line; and a switching valve (V), a component concentration column (M) and a switching valve (V) are connected in a different line.

12. (amended) A method for analyzing a trace amount of a component in a sample with improved detections sensitivity for use in the low flow velocity gradient high performance liquid chromatographic apparatus according to

Claim 10, which comprises trapping the target component in the component concentration column (M) by means of a mobile phase discharged from the solvent pump (P1); discharging a different mobile phase from the solvent pump (P2) by turning the switching valve; and eluting the target component from the separation column (C) through diffusion of the target component using the diffusion promoting device (DU).

 13. (amended) A method for analyzing a trace amount of a component in a sample with improved detections sensitivity for use in the low flow velocity gradient high performance liquid chromatographic apparatus according to Claim 11, which comprises injecting the target component into the component concentration column (M) while filling a solvent in the solvent mixer (MC) by means of the solvent pump (P1); discharging a mobile phase from the pump (P2) by turning the switching valve; and eluting the target component from the separation column (C) through diffusion of the target component using the diffusion promoting device (DU).

Attached hereto is a marked up version showing the changes made to the application by this Amendment.